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<110> O'HANLEY, PETER
      DENICH, KENNETH
      SCHMIDT, M. ALEXANDER
<120> IMMUNOGENIC PILI PRESENTING FOREIGN PEPTIDES, THEIR
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<140> 09/833,079
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                            -15
gtt cat ggt gtt ttt gcc ggt ccg ttt cct ccg ccc ggc atg tcc ctt
                                                                   96
Val His Gly Val Phe Ala Gly Pro Phe Pro Pro Gly Met Ser Leu
                    - 1
cct gaa tac tgg gga gaa gag cac gta tgg tgg gac ggc agg gct gct
                                                                   144
Pro Glu Tyr Trp Gly Glu Glu His Val Trp Trp Asp Gly Arg Ala Ala
ttt cat ggt gag gtt gtc aga cct gcc tgt act ctg gcg atg gaa gac
                                                                   192
Phe His Gly Glu Val Val Arg Pro Ala Cys Thr Leu Ala Met Glu Asp
            30
gcc tgg cag att att gat atg ggg gaa acc ccg gta cgg gat tta cag
                                                                   240
Ala Trp Gln Ile Ile Asp Met Gly Glu Thr Pro Val Arg Asp Leu Gln
         45
att ggt ttc tcc gga cct gaa aga aaa ttc agc ctc cgg ctc agg aat
Ile Gly Phe Ser Gly Pro Glu Arg Lys Phe Ser Leu Arg Leu Arg Asn
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                         65
tgt gaa ttt aac agt cag ggt ggg aac ctt ttc tct gat tcc cgg ata
                                                                   336
Cys Glu Phe Asn Ser Gln Gly Gly Asn Leu Phe Ser Asp Ser Arg Ile
                     80
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Arg Val Thr		ggc gtc Gly Val								384								
tta tcc ggt Leu Ser Gly			Ile A					val		432								
gga aat att Gly Asn Ile 125						Ala I				480								
ggt aat gaa Gly Asn Glu 140					Arg	_				528								
aaa aaa ctt Lys Lys Leu 155				_			_		_	576								
gat tat gag Asp Tyr Glu	_									588								
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<pre><223> Descr acid <400> 32 Met Arg Leu</pre>	Arg Phe Val Phe Trp Gly 15 Glu Val 30 Ile Ile	Ser Val Ala Gly -1 1 Glu Glu Val Arg Asp Met	Pro L -15 Pro P His V Pro A Gly G	pHUR849 Leu Phe Phe Pro Val Trp 20 Lla Cys 35	Phe Pro Thr	smid Phe G Pro G Asp G Leu A	ely Cys 10 Ely Mes Ely Arg Ala Mes 40 Arg Ass	S Val Ser J Ala 25 Glu D Leu	Leu 10 Ala Asp Gln									
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Leu Ser Gly Gln Ala Lys Gly Ile Asn Leu Gln Ile Ala Asp Val Arg 110 Gly Asn Ile Ala Arg Ala Gly Lys Val Met Pro Ala Ile Pro Leu Thr Gly Asn Glu Glu Ala Leu Asp Tyr Thr Leu Arg Ile Val Arg Asn Gly Lys Lys Leu Glu Ala Gly Asn Tyr Phe Ala Val Leu Gly Phe Arg Val 160 165 Asp Tyr Glu <210> 33 <211> 588 <212> DNA <213> Artificial Sequence <220> <223> Description of Artificial Sequence: Synthetic pDAL201B plasmid <220> <221> sig_peptide <222> (1)..(66) <220> <221> mat_peptide <222> (67)..(585) <220> <221> CDS <222> (1)..(585) <400> 33 atg aga ctg cga ttc tct gtt cca ctt ttc ttt ttt tgc tgt gtg ttt 48 Met Arg Leu Arg Phe Ser Val Pro Leu Phe Phe Cys Cys Val Phe -20 gtt cat tgt gtt ttt gcc ggt ccg ttt cct ccg ccc ggc atg tcc ctt 96 Val His Cys Val Phe Ala Gly Pro Phe Pro Pro Gly Met Ser Leu -5 cct gaa tac tgg gga gaa gaa cac gta tgg tgg gac ggc agg gct gct 144 Pro Glu Tyr Trp Gly Glu Glu His Val Trp Trp Asp Gly Arg Ala Ala 15 ttt cat ggt gag gtt gtc aga cct gcc tgt act ctg gcg atg gaa gac Phe His Gly Glu Val Val Arg Pro Ala Cys Thr Leu Ala Met Glu Asp 30 35 gcc tgg cag att atc gat atg ggg gaa acc ccg gtt cgg gat tta cag Ala Trp Gln Ile Ile Asp Met Gly Glu Thr Pro Val Arg Asp Leu Gln 50 55 -

						gaa Glu 65	_			_						288
						ggt Gly										336
						gtc Val										384
						gga Gly										432
			_		_	Gly 333		_	_		_			_	_	480
						gat Asp 145										528
						aat Asn										576
_	tat Tyr	gag Glu	tga													588
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Val	His -5	Cys	Val	Phe	Ala -1	Gly 1	Pro	Phe	Pro	Pro 5	Pro	Gly	Met	Ser	Leu 10	
Pro	Glu	Tyr	Trp	Gly 15	Glu	Glu	His	Val	Trp 20	Trp	Asp	Gly	Arg	Ala 25	Ala	
Phe	His	Gly	Glu 30	Val	Val	Arg	Pro	Ala 35	Cys	Thr	Leu	Ala	Met 40	Glu	Asp	
Ala	Trp	Gln 45	Ile	Ile	Asp	Met	Gly 50	Glu	Thr	Pro	Val	Arg 55	Asp	Leu	Gln	

Ile Gly Phe Ser Gly Pro Glu Arg Lys Phe Ser Leu Arg Leu Arg Asn 60 65 Cys Glu Phe Asn Ser Gln Gly Gly Asn Leu Phe Ser Asp Ser Arg Ile Arg Val Thr Phe Asp Gly Val Arg Gly Glu Thr Pro Asp Lys Phe Asn Leu Ser Gly Gln Ala Lys Gly Ile Asn Leu Gln Ile Ala Asp Ala Arg 115 Gly Asn Ile Ala Arg Ala Gly Lys Val Met Pro Ala Ile Pro Leu Thr 130 Gly Asn Glu Glu Ala Leu Asp Tyr Thr Leu Arg Ile Val Arg Asn Gly Lys Lys Leu Glu Ala Gly Asn Tyr Phe Ala Val Leu Gly Phe Arg Val Asp Tyr Glu <210> 35 <211> 588 <212> DNA <213> Artificial Sequence <220> <223> Description of Artificial Sequence: Synthetic pDAL210B plasmid <220> <221> sig_peptide <222> (1)..(66) <220> <221> mat_peptide <222> (67)..(585) <220> <221> CDS <222> (1)..(585) atg aga ctg cga ttc tct gtt cca ctt ttc ttt ttt tgc tgt gtg ttt 48 Met Arg Leu Arg Phe Ser Val Pro Leu Phe Phe Cys Cys Val Phe -15 Val His Gly Val Phe Ala Gly Pro Phe Pro Pro Pro Gly Met Ser Leu -1 cct gaa tac tgg gga gaa gag cac gta tgg tgg gac ggc agg gct gct Pro Glu Tyr Trp Gly Glu Glu His Val Trp Trp Asp Gly Arg Ala Ala

ttt cat ggt g Phe His Gly C			-		
gcc tgg cag a Ala Trp Gln 1 45	_				
att ggt ttt t Ile Gly Phe S 60			_		
tgt gaa ttt a Cys Glu Phe A 75					
agg gtg act t Arg Val Thr I				-	
tta tcc ggt o Leu Ser Gly O					
gga aat att g Gly Asn Ile A 125				_	
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Pro Glu Tyr T	Frp Gly Glu 15	Glu His Val	Trp Trp Asp	Gly Arg Ala 25	Ala

Phe His Gly Glu Val Val Arg Pro Ala Cys Thr Leu Ala Met Glu Asp 35 Ala Trp Gln Ile Ile Asp Met Gly Glu Thr Pro Val Arg Asp Leu Gln Ile Gly Phe Ser Gly Pro Glu Arg Lys Phe Ser Leu Arg Leu Arg Asn Cys Glu Phe Asn Ser Gln Gly Gly Asn Leu Phe Ser Asp Ser Arg Ile 85 80 Arg Val Thr Phe Asp Gly Val Arg Gly Glu Thr Pro Asp Lys Phe Asn Leu Ser Gly Gln Ala Lys Gly Ile Asn Leu Gln Ile Ala Asp Ala Arg Gly Asn Ile Ala Arg Ala Gly Lys Val Met Pro Ala Ile Pro Leu Thr 130 135 Gly Asn Glu Glu Ala Leu Asp Tyr Thr Leu Arg Ile Val Arg Asn Gly Lys Lys Leu Glu Ala Gly Asn Tyr Phe Ala Val Leu Gly Phe Arg Val 160 Asp Tyr Glu <210> 37 <211> 588 <212> DNA <213> Artificial Sequence <223> Description of Artificial Sequence: Synthetic pDAL200A plasmid <220> <221> sig_peptide <222> (1)..(66) <220> <221> mat peptide <222> (67)..(585) <220> <221> CDS <222> (1)..(585) <400> 37 atg aga ctg cga ttc tct gtt cca ctt ttc ttt ttt tgc tgt gtg ttt

Met Arg Leu Arg Phe Ser Val Pro Leu Phe Phe Cys Cys Val Phe

-10

-15

-20

	cat His -5															96
	gaa Glu				_	_		_						_	_	144
	cat His															192
	tgg Trp															240
	ggt Gly 60					_	_			_						288
_	gaa Glu			_	_							_				336
	gtg Val			_		_			_	_	_	_	_			384
	tcc Ser		_	_					_	_		_	_	_		432
	aat Asn		_		_			_	-		-			_	_	480
	aat Asn 140	_	_		_					_			_			528
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_	tat Tyr		tga													588
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-5 -1 1 5 10

Pro Glu Tyr Trp Gly Glu Glu His Val Trp Trp Asp Gly Arg Ala Ala 15 20 25

Phe His Gly Glu Val Val Arg Pro Ala Cys Thr Leu Ala Met Glu Asp

Ala Trp Gln Ile Ile Asp Met Gly Glu Thr Pro Val Arg Asp Leu Gln
45 50 55

Ile Gly Phe Ser Gly Pro Glu Arg Lys Phe Ser Leu Arg Leu Arg Asn 60 65 70

Cys Glu Phe Asn Ser Gln Gly Gly Asn Leu Phe Ser Asp Ser Arg Ile
75 80 85 90

Arg Val Thr Phe Asp Gly Val Arg Gly Glu Thr Pro Asp Lys Phe Asn 95 100 105

Leu Ser Gly Gln Ala Lys Gly Ile Asn Leu Gln Ile Ala Asp Ala Arg
110 115 120

Gly Asn Ile Ala Arg Ala Gly Lys Val Met Pro Ala Ile Pro Leu Thr 125 130 135

Gly Asn Glu Glu Ala Leu Asp Tyr Thr Leu Arg Ile Val Arg Asn Gly 140 145

Lys Lys Leu Glu Ala Gly Asn Tyr Phe Ala Val Leu Gly Phe Arg Val 155 160 165 170

Asp Tyr Glu

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Pro Glu Tyr Trp Gly Glu Glu His Val Trp Trp Asp Gly Arg Ala Ala 35 40 45

Phe His Gly Glu Val Val Arg Pro Ala Cys Thr Leu Ala Met Glu Asp 50 55 60

Ala Trp Gln Ile Ile Asp Met Gly Glu Thr Pro Val Arg Asp Leu Gln 65 70 75 80

Asn Gly Phe Ser Gly Pro Glu Arg Lys Phe Ser Leu Arg Leu Arg Asn 85 90 95

Cys Glu Phe Asn Ser Gln Gly Gly Asn Leu Phe Ser Asp Ser Arg Ile 100 105 110

Arg Val Thr Phe Asp Gly Val Arg Gly Glu Thr Pro Asp Lys Phe Asn 115 120 125

Leu Ser Gly Gln Ala Lys Gly Ile Asn Leu Gln Ile Ala Asp Xaa Arg 130 135 140

Gly Asn Ile Ala Arg Ala Gly Lys Val Met Pro Ala Ile Pro Leu Thr 145 150 155 160

Gly Asn Glu Glu Ala Leu Asp Tyr Thr Leu Arg Ile Val Arg Asn Gly
165 170 175

Lys Lys Leu Glu Ala Gly Asn Tyr Phe Ala Val Leu Gly Phe Arg Val 180 185 190

Asp Tyr Glu 195